DOCUMENT RESUME

ED 328 911 CS 212 640

AUTHOR Ross, Steven M.; And Others
TITLE Writing in a Computer-Saturated Classroom.
PUB DATE Nov 90
NOTE 7p.; Paper presented at the Annual Meeting of the College Reading Association (34th, Nashville, TN, November 2-4, 1990).
PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Uses in Education; Educational Technology; Grade 6; Intermediate Grades; Learning Activities; *Word Processing; Writing Attitudes; *Writing Exercises; *Writing Improvement; *Writing Instruction; Writing Research; Writing Skills
IDENTIFIERS Apple Classrooms of Tomorrow; Apple Microcomputers; California Achievement Tests

ABSTRACT

A study examined questions concerning: (1) how writing was taught and integrated with other learning activities in the Apple Classroom of Tomorrow (ACOT) environment; (2) students' experiences with and attitudes toward word-processing; (3) teachers' experiences and attitudes; and (4) the influences of the computer-based activities on writing improvement. Subjects were 55 sixth-grade minority students. The research design was quasi-experimental and descriptive, involving analyses of quantitative and qualitative data obtained from teacher and student interviews, classroom observations, student and tutor surveys, and student writing samples. Results indicated a significant advantage for the ACOT group on both writing samples. Tutors felt that the electronic Bulletin Board System (BBS) had strong potential for facilitating writing skills development, but that the present program was limited by: restrictive writing features of the BBS, lack of structure in the writing activities, and the difficulty of accessing and communicating over the BBS. Teacher interviews and classroom observations revealed similar practices in the ACOT and control classes, except that ACOT students did nearly all their school and home writing assignments on the computer. The ACOT teachers strongly felt that students were more receptive to writing on the word processor and were helped by it. (MG)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED328911

# Writing in a Computer-Saturated Classroom

Steven M. Ross, Professor
Lana J. Smith, Professor
Memphis State University
Memphis, TN 38152

Ellen Woodson
Teacher, Memphis City Schools

CS212440

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Steven Ross
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Writing in a Computer-Saturated Classroom

As advancements in technology are changing the tools of written communication from primitive markers to modern computers, the nature of writing is also undergoing change (Dauite, 1985). In the specific case of word-processing, advantages are suggested for using a computer for making revisions and improving student attitudes toward the writing process (Bangert-Drowns, 1989; McArthur, 1988). Although the complexity of classroom conditions make it meaningless to try to isolate the computer's "effect" on writing improvement (see Clark, 1987), a question of significant concern to educators is how computer-based writing activities can be effectively integrated into the curriculum and classroom. One type of activity is "computer-specific" applications, such as electronic mail (e.g., Collins et al., 1982), which extend the forms of writing that can be done in a conventional classroom. Another is "computer-supported" applications that maintain the normal writing curriculum and teaching methods, but use the computer as a primary writing medium.

In the present research, the availability of a unique elementary school environment, the Apple Classroom of Tomorrow (ACOT), permitted examination of both types of orientations. Each ACOT student received a personal computer to use during the school day and one to use at home. We were thus able to examine students' writing activities under conditions that anticipate future learning environments in which computers will be

highly accessible as a support tool both in and out of school. Students also used an electronic Bulletin Board System (BBS) to communicate with each other and complete assignments transmitted by college student "tutors." Research questions concerned (a) how writing was taught and integrated with other learning activities in the ACOT environment, (b) students' experiences with and attitudes toward word-processing, (c) teachers' experiences and attitudes, and (d) the influences of the computer-based activities on writing improvement.

## Method

Subjects were 55 sixth-grade minority students, 25 of whom had been randomly selected from an applicant pool to participate in ACOT. The remaining 30 attended a conventional class at the same school. Scores on California Achievement Tests showed no advantage for either group in basic skills, including language. The research design was quasi-experimental and descriptive, involving analyses of quantitative and qualitative data obtained from teacher and student interviews, classroom observations, student and tutor surveys, and student writing samples. The writing samples consisted of two essays written in class under controlled conditions. Each essay was scored in the blind by two experienced English teachers on 14 different criteria including length, spelling, topic sentence use, details, tense agreement, pronoun use, capitalization, and overall unity and coherence (median interrater $r = .94$); Classroom observations were conducted regularly by the research staff throughout the school year.

## Results

The writing analyses showed a significant advantage for the ACOT

group on both writing samples ($p < .05$). Significant univariate effects on Sample 1 indicated that the ACOT group wrote more, used more topic sentences, and had fewer mistakes in tense. On Sample 2, the ACOT group had significantly fewer errors in spelling, capitalization, and subject verb agreement; and better overall content. Student interview responses and classroom observations clearly indicated a high degree of enthusiasm for using computers for writing. For example, when asked to identify their favorite part of the entire ACOT program, 60% of the students volunteered writing on the computer. All students indicated that they preferred word-processing to writing by hand. Important advantages were identified as editing capabilities, printing one's work, and typing. In contrast, student reactions to the BBS activities generally indicated dissatisfaction with the assignments and their helpfulness to writing improvement. Tutors as a group felt that the BBS had strong potential for facilitating writing skills development, but that the present program was limited by: (a) restrictive writing features of the BBS, (b) lack of structure in the writing activities, and (c) the difficulty of accessing and communicating over the BBS. Teacher interviews and classroom observations revealed similar practices in the ACOT and control classes, except that ACOT students did nearly all their school and home writing assignments on the computer. The ACOT teachers strongly felt that students were more receptive to writing on the word-processor and were helped by it.

## Educational Implications

The clearest finding from the present research is that when computers were highly accessible as a writing tool, students used them enthusiastically and routinely to complete their work. In addition to the strong support for this pattern from student and teacher reports, an

especially revealing classroom observation was that 100% of the ACOT class selected the computer over manual writing when given a choice of modes for writing an in-class essay to be graded. Such favorable attitudes extend earlier findings (Bruce et al., 1985; Madison, 1988; Strickland, 1986) to contexts in which word-processing is used as a primary mode of writing rather than as an isolated activity practiced for a brief time each day or for a limited part of the school year. The latter types of applications have questionable external validity (Becker, 1987), and seem analogous to investigating *manual* writing activities in classrooms where use of pencils and paper would be artificially restricted to "special" times or shared between class members.

A second finding was that integrating computer-based writing into the classroom required little extra preparation, except for initial training on operating the computer and word-processor. Once taught those skills, students adapted to the word-processor readily and naturally. Training in keyboarding is suggested to increase speed and accuracy, and prevent the formation of poor techniques (see Hester, 1988). Third, the BBS appeared potentially beneficial as a supplementary means for practicing and improving writing, but limitations in its operational features and in the appropriateness of the writing assignments reduced its effectiveness. Fourth, findings from the writing comparison analysis were suggestive of beneficial influences of the ACOT experiences on writing improvement. Given the quasi-experimental design employed, this result needs to be viewed cautiously. It seems likely, however, that long-term immersion in an environment in which writing is viewed as easier and more enjoyable could well engender such positive effects.

References

Bangert-Drowns, R.L. (1989). Research on wordprocessing and writing instruction. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Becker, H. J. (1987). The impact of computer use on children's learning: What research has shown and what it has not. (Report No. 18) Baltimore, MD: Center for Research on Elementary and Middle Schools, The Johns Hopkins University.

Bruce, B., Michaels, S., and Watson-Gegeo, K., (1985). How computers can change the writing process. Language Arts, 67 (2): 143-149.

Clark, R.E. (1987). Reconsidering rsearch on learning from media. Review of Educational Research, 53: 445-459.

Collins, A., Bruce, B., & Rubin, A. (1982, February). Microcomputer-based writing activities for the upper elementary grades. Proceedings of the Fourth International Congress and Exposition of the Society for Applied Learning and Technology, Orlando, FL.

Daiute, C. (1985). Issues in using computers to socialize the writing process. Educational Communication and Technology Journal, 33: 41-40.

Hester, J. (1988). An analysis of the alphanumeric keyboarding skills taught and achieved in the Apple Classroom of Tomorrow Program. Unpublished Master's Thesis, Memphis State University.

McArthur, C.A. (1988). The impact of computers on the writing process. Exceptional Children, 54: 536-542.

Strickland, J. (1986, Spring). Beyond word processing: Computer-assisted writing instruction. Journal of Teaching Writing, 51-58.